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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/631,933

07/31/2003

Alan F. Benner

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10/03/2005

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EXAMINER

KANG, JULIANA K

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/631,933	BENNER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Juliana K. Kang	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-14 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-14 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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1. Applicant's communication filed on July 19, 2005 has been carefully studied by the Examiner. The arguments advanced therein are not persuasive and the rejections based upon prior art made of record in the previous office action are hereby maintained. Thus, this action is made **final**.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 1-3 and 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hudgins et al (U.S. Patent 6,270,262 B1) and further in view of Giboney et al (U.S. Patent 6,318,909 B1).**

Regarding claims 1, 5, 7 and 8, Hudgins et al disclose an optoelectronic assembly for a computer system, comprising: an electronic chip set (46); a substrate (30b) in communication with the electronic chip set; an electrical signaling medium (101, flexible circuit board) having a first end in signal communication with the substrate; an optoelectronic transducer (60) in signal communication with a second end of the electrical signaling medium wherein an electrical signal from the electronic chip set is communicated to the optoelectronic transducer via the substrate and the electrical signaling medium (see column 4 lines 40-63), and wherein the electronic chip set and the optoelectronic transducer share a common thermal path for cooling (see column 4 lines 27-30 and 44-46). Hudgins et al show heat spreader (50) in thermal contact with the electronic chip set on first surface and the part of the optoelectronic transducer (70)

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the electronic chip set on first surface and the part of the optoelectronic transducer (70) in thermal contact with the second surface wherein the first surface being orthogonal to the second space (see Fig. 3). Hudgins et al teach coupling the optoelectronic assembly module to an optical fiber (62) however, Hudgins et al is silent about an optical coupling guide. Giboney et al teach using an optical coupling guide (a set of alignment pins) for aligning an optical fiber ribbon to an optoelectronic assembly for a precise alignment. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use an optical coupling guide in Hudgins et al as taught by Giboney et al for optimum coupling efficiency.

Regarding claims 3 and 14, Hudgins et al teach using the optoelectronic assembly in airborne applications (requires computer systems) thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use various chips to perform various functions in Hudgins et al to process more complex applications.

Regarding claim 6, Hudgins et al teach an integrated circuit (64) and a laser (90).

Regarding claim 9-12 and 20, as described above Hudgins et al and Giboney et al teach the claimed limitations except for the flexible printed circuit board in communication with either the second major surface or the edge surface of the substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the flexible printed circuit board in communication with the second major surface or the edge surface of the substrate to make the device more compact and it has been held that rearranging parts of an invention involves only

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routine skill in the art. Hudgins et al and Giboney et al do not teach having a recess.

Using a recess is well known in the art to provide more accurate alignment between two components. Thus, using a recess in Hudgins et al and Giboney et al would have been obvious to one having ordinary skill in the art at the time the invention was made for optimum alignment between the substrate and the printed circuit board.

Regarding claim 13, Hudgins et al teach using a plurality of optoelectronic transducers. Having the transducers being offset from one another in either vertical direction or a horizontal direction would have been obvious to reduce a crosstalk between the transducers.

**4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hudgins et al (U.S. Patent 6,270,262 B1) and Giboney et al (U.S. Patent 6,318,909 B1) as applied to claim 1 and further in view of Nakao et al (U.S. Patent 6,306,511 B1).**

As described above Hudgins et al and Giboney et al teach the claimed invention including the substrate (printed circuit board) except the substrate made of an organic or a ceramic material. Nakao et al teach using a ceramic material for a circuit board to make an electronic chip device more compact and light-weighted. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use any known suitable material including a ceramic material in Hudgins et al and Giboney et al as taught by Nakao et al to make the device more compact.

***Response to Arguments***

5. Applicant's arguments filed July 19, 2005 have been fully considered but they are not persuasive. Regarding claim 1, Applicant argues that Hudgins et al do not teach the chip and the optoelectronic transducer that are positioned on different, orthogonal sides of heat spreader. The Examiner does not agree with this. Hudgins et al optoelectronic transducer assembly (60) comprises the electrically conductive extension member (70) that extends from the substrate 64. The electrically conductive extension member part comprises optoelectronic elements (see column 5 lines 4-17). And the electrically conductive extension member that is a part of the optoelectronic transducer assembly is in contact with a surface of the heat spreader. Hudgins et al clearly show this limitation in Fig. 3.

Regarding claim 11, applicant argues that that Hudgins et al do not teach the claimed limitation of the flexible printed circuit board that is absent electrical signal interconnections except for electrical signal interconnections between the substrate and the optoelectronic transducer. And also argues that Hudgins et al do not teach a chip, substrate and printed circuit board along with the connection by the flexible printed circuit board. The Examiner does not agree with this. Hudgins et al clearly states "... flexible circuit 101 to connect the planar substrate to the circuit carry face of the board 32." Thus, teaches that the claimed limitation of the flexible printed circuit board that is absent electrical signal interconnections except for electrical signal interconnections between the substrate and the optoelectronic transducer. Furthermore, Hudgins et al

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clearly teach chips (46), substrate (30b), printed circuit board (30a) and a flexible printed circuit board (101).

Regarding claim 4, in response to applicant's argument that Nakao fails to cure the deficiencies of Hudgins and Giboney, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348. The examiner can normally be reached on Mon. & Thur. 7:00-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**JULIANA KANG**  
**PRIMARY EXAMINER**